approach at 18 s. Obviously interested in the song; searched for the source of the sound and flicked its wings now and then. At *c.* 1 min 50 s it moved away from speaker. • *kansuensis* (2 min). 1st approach at 3 s followed by full response rest of time. Much stronger response than to *proregulus* and *chloronotus*.

Individual No. 12, Mengda 12 June 1994
• *kansuensis* (a few s). Immediately full response. • *proregulus* (2 min). No response. • *chloronotus* type A (2 min). No response. • *chloronotus* type B (4 min). 1st approach at *c.* 15 s, but no further response. • *kansuensis* (2 min). 1st approach at 45 s (bird was not seen when playback started, so perhaps had moved out of hearing range) followed by full response rest of time. • *proregulus* (4 min). Moved somewhat closer to speaker, but was at the most curious, definitely not aggressive. • *chloronotus* type A (4 min). No response. • *chloronotus* type B (4 min). No response. • *kansuensis* (2 min). 1st approach at 4 s followed by full response rest of time.

Individual No. 13, Mengda 12 June 1994
• *kansuensis* (a few s). Immediately full response. • *proregulus* (2 min). No response. • *chloronotus* type A (2 min). No response. • *chloronotus* type B (2 min). No response. • *kansuensis* (2 min). 1st approach at 3 s followed by full response rest of time. • *proregulus* (2 min). 1st approach at 6 s, but no further response. • *chloronotus* type A (2 min). No response. • *chloronotus* type B (2 min). No response. • *kansuensis* (2 min). 1st approach at 3 s followed by full response rest of time.

Individual No. 14, Mengda 13 June 1994
• *proregulus* (2 min). No response. • *chloronotus* type A (2 min). No response. • *chloronotus* type B (2 min). No response. • *kansuensis* (2 min). 1st approach at 12 s followed by full response rest of time. • *proregulus* (2 min). No response. • *chloronotus* type A (2 min). No response. • *chloronotus* type B (2 min). No response. • *kansuensis* (2 min). 1st approach at 8 s followed by full response rest of time.

Individual No. 15, Mengda 14 June 1994
• *kansuensis* (a few s). Immediately full response. • *proregulus* (2 min). No response. • *chloronotus* type A (2 min). No response. • *kansuensis* (*c.* 30 s). Immediately full response. • *chloronotus* type B (2 min). No response. • *kansuensis* (1 min). 1st approach at 8 s followed by full response rest of time. • *proregulus* (2 min). No response. • *kansuensis* (*c.* 30 s). Immediately full response. • *chloronotus* type A (2 min). No response. • *chloronotus* type B (2 min). No response. • *kansuensis* (2 min). 1st approach at 4 s followed by full response rest of time. • *chloronotus* type B (2 min). No response.

Individual No. 16, Hezuozhen 15 June 1994
• *kansuensis* (a few s). Immediately full response. • *proregulus* (2 min). No response. • *chloronotus* type A (2 min). No response. • *chloronotus* type B (2 min). No response. • *kansuensis* (2 min). 1st approach at 18 s followed by full response rest of time, but not quite so aggressive as usual. • *proregulus* (2 min). No response. • *chloronotus* type A (2 min). No response. • *chloronotus* type B (2 min). No response. • *kansuensis* (2 min). 1st approach at 14 s followed by full response rest of time, but not quite so aggressive as usual.

Individual No. 17, Hezuozhen 15 June 1994
• *kansuensis* (a few s). Immediately full response. • *chloronotus* type B (2 min). No response. • *kansuensis* (a few s). Immediately full response. • *chloronotus* type A (2 min). No response. • *kansuensis* (a few s). Immediately full response. • *proregulus* (2 min). No response. • *kansuensis* (a few s). Immediately full response. • *chloronotus* type B (2 min). No response. • *chloronotus* type A (2 min). No response. • *kansuensis* (2 min). 1st approach at 8 s followed by full response rest of time. • *proregulus* (2 min). No response. • *kansuensis* (a few s). Immediately full response. • *chloronotus* type A (2 min). No response. • *kansuensis* (a few s). Immediately full response. • *chloronotus* type B (2 min). No response. • *kansuensis* (1 min). 1st approach at 6 s followed by full response rest of time. • *chloronotus* type B (2 min). No response.

Individual No. 18, Huzu Bei Shan 24 June 1995
• *chloronotus* type A (4 min). No response. • *kansuensis* (1 min). 1st approach at 35 s followed by full response rest of time. • *chloronotus* type A (4 min). No response. • *kansuensis* (1 min). 1st approach at 12 s followed by full response rest of time.

• *chloronotus* type B (2 min). No response. • *kansuensis* (1 min). 1st approach at 6 s followed by full response rest of time. • *chloronotus* type B (2 min). No response.

chloronotus

Individual No. 1, Emei Shan 2 June 1994
• *kansuensis* (2 min). No response. • *chloronotus* (2 min). 1st approach at 16 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* (2 min). 1st approach at 6 s followed by full response rest of time. • *kansuensis* (2 min). No response.

Individual No. 2, Emei Shan 3 June 1994
• *kansuensis* (2 min). No response. • *chloronotus* type A (2 min). 1st approach at 4 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* type A (2 min). 1st approach at 5 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* type B (2 min). 1st approach at 6 s followed by full response rest of time.

Individual No. 3, Emei Shan 3 June 1994
• *proregulus* (2 min). No response. • *sichuanensis* (2 min). No response. • *kansuensis* (4 min). No response. • *chloronotus* type B (2 min). 1st approach at 7 s followed by full response rest of time. • *proregulus* (2 min). No response. • *sichuanensis* (2 min). No response. • *kansuensis* (4 min). No response. • *chloronotus* type B (2 min). 1st approach at 4 s followed by full response rest of time. • *kansuensis* (4 min). No response, though at 35 s and 3 min 40 s came close to speaker, but showed no aggression, and moved off almost immediately. • *chloronotus* type B (2 min). 1st approach at 7 s followed by full response rest of time.

Individual No. 4, Emei Shan 3 June 1994
• *kansuensis* (2 min). No response. • *chloronotus* (2 min). 1st approach at 8 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* type A (2 min). 1st approach at 4 s followed by full response rest of time.

Individual No. 5, Chakou 16 June 1994
• *chloronotus* (a few s). Immediately full response. • *kansuensis* (2 min). No response. • *chloronotus* type B (1 min). 1st approach at 12 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* type A (2 min). 1st approach at 9 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* type B (a few s). Immediately full response.

Individual No. 6, Chakou 16 June 1994
• *chloronotus* (a few s). Immediately full response. • *kansuensis* (2 min). No response. • *chloronotus* type B (2 min). 1st approach at 8 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* type A (2 min). 1st approach at 4 s followed by full response rest of time.

Individual No. 7, Chakou 16 June 1994
• *chloronotus* (a few s). Immediately full response. • *kansuensis* (2 min). No response. • *chloronotus* type A (2 min). 1st approach at 14 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* type A (2 min). 1st approach at 9 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* type A (2 min). 1st approach at 4 s followed by full response rest of time. • *kansuensis* (2 min). No response. • *chloronotus* type B (2 min). 1st approach at 4 s followed by full response rest of time.

New records of birds from Auyán-tepui, Estado Bolívar, Venezuela

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Received 6 July 1996

Auyán-tepui, located in Estado Bolívar, southern Venezuela, is one of the largest of the isolated sandstone mesas or tepuis of the highland region of south Venezuela that has come to be known as the Pantepui (Mayr & Phelps 1967). Auyán-tepui was first explored ornithologically during the Phelps Venezuela expedition of 1937–1938 (Chapman 1939, Gilliard 1941). That expedition spent several months on the southern talus slopes of the mountain, but due to arduous conditions and logistic difficulties, was only able to explore a small area on the southern, drier end of the 700 square kilometre summit plateau. Despite this, 32 species were recorded on the plateau including several new subspecies. Mayr & Phelps (1967) considered this an adequate sample for comparative studies of the avifauna. Subsequent to the 1937 expedition, the Universidad Central de Venezuela organised a brief expedition in 1956 that spent approximately one month on the extreme south end of the plateau and obtained a few specimens of birds as part of a general collection that emphasised plants (Steyermark 1967); the ornithological results of the 1956 expedition have not been reported in the literature. The geology, geomorphology and botany of the tepui have been reviewed by Tate (1938) and Berry *et al.* (1995).

As part of the recent Robert G. Goelet American Museum–Terramar Expedition to Auyán-tepui, we collected birds on the summit from 1 February to 1 March 1994. Five helicopter-supported camps were established in widely dispersed areas of the tepui summit, enabling us to sample the avifauna from a variety of habitats and elevations. Based on our Global Positioning System estimates (Appendix 1) of latitude and longitude, modern side-scanning radar images of Auyán-tepui, and the published map from the 1937/38 expedition (Tate 1938), it appears that our camps I and V were very close to the Phelps Expedition's 1850 m and 2200 m camps. Our other three camps sampled areas not previously visited by ornithologists, including a very wet area just above Angel Falls. Specimens were obtained using mistnets and shotguns and are deposited in the collections of the American Museum of Natural History (AMNH), New York, the Estación Biológica de Rancho Grande (EBRG), Maracay, Venezuela, and the Colección Ornitológica Phelps (COP), Caracas.

In this paper, we report 21 new species records for the summit plateau of Auyán-tepui; this includes one first record collected by the 1956 expedition from the Universidad Central de Venezuela. Several of our new records can be attributed to our use of mistnets, a sampling technique not used on early expeditions to localities in the Pantepui. The use of mistnets explains our collection of the *Aegolius* owl, the

oilbird, and several new hummingbirds. In one calendar month (four man months), we added 21 new species to a summit avifauna that had numbered 32. We continue to believe (e.g. Barrowclough *et al.* 1995) that the avifaunas of most elements of the Venezuelan Pantepui are inadequately known due to restricted sampling duration, seasons, and techniques. A complete list of birds known to date from the summit plateau of Auyán-tepui is included in Appendix 2.

New records for Auyán-tepui

TEPUI TINAMOU *Crypturellus ptaritepui*

This tinamou, described in 1945, was previously known from only six specimens collected on Ptari-tepui and adjacent Sororopán-tepui (Phelps & Phelps 1958); those tepuis are some 50 km distant from Auyán-tepui and separated from it by the elevated (500–1000 m) grassland known as La Gran Sabana. The tinamou had been recorded as occurring in cloud forest in the subtropical zone between 1350 and 1800 m (Meyer de Schauensee & Phelps 1978). On Auyán-tepui four specimens were taken at three localities, from approximately 1500 to 1700 m, in the more humid northern areas of the tepui. The species was encountered frequently both in forested and more open scrubby areas but was retiring in its habits and usually was seen running into cover. One of two males collected had moderately enlarged testes and one of two females had an enlarged ovary; none were in moult. Vocalisations of an unknown tinamou at high elevations on Chimantá-tepui (*c.* 50 km south of Auyán-tepui) were tentatively assigned to this species by Medina Cuervo (1992). The failure of the 1937/38 Phelps expedition to obtain this species on Auyán-tepui is perplexing. Nevertheless, our establishment of the presence of the Tepui Tinamou there and its presumptive presence on Chimantá suggest that this species has a much wider distribution in the eastern Pantepui than had been previously recognised.

TURKEY VULTURE *Cathartes aura*

Individuals frequently were seen soaring near the tepui rim.

BLACK VULTURE *Coragyps atratus*

One sight record at Angel Falls (Camp IV).

ROADSIDE HAWK *Buteo magnirostris*

This hawk was seen at several localities at elevations from 1700 to 2200 m.

GREAT BLACK HAWK *Buteogallus urubitinga*

One individual was seen soaring out of the tepui's central canyon and over a forested area of the tepui at 1700 m.

SWALLOW-TAILED KITE *Elanoides forficatus*

Up to three individuals were observed, both flying and perched, in the vicinity of Angel Falls.

LITTLE CHACHALACA *Ortalis motmot*

Several individuals were seen and heard calling at 1530 m.

SPOTTED SANDPIPER *Actitis macularia*

This North American migrant was observed foraging along a large river near the rim of the central canyon.

RED AND GREEN MACAW *Ara chloroptera*

Daily sight records of a pair at 1530 m (near Camp III).

BUFF-FRONTED OWL *Aegolius harrisii*

A male with small testes and light body moult was collected at night in a mistnet in an open rocky area at 1700 m. This little known owl had been recorded in Venezuela from a few widely scattered localities: Mérida in the Andes, El Junquito in the Distrito Federal (unpubl. record; specimen at AMNH), and in the Pantepui from Cerro de la Neblina (Willard *et al.* 1991). This is the easternmost record of the nominate northern race. This record and the recent one from Neblina indicate that intensive nocturnal use of mistnets may establish a general occurrence of this species on the larger, higher tepuis.

OILBIRD *Steatornis caripensis*

One specimen of this wide-ranging bird was taken by mistnet over a stream at 1750 m where 15 to 20 birds were attracted to a light used for collecting moths on a foggy night. The species is known from scattered localities throughout the Pantepui (Willard *et al.* 1991) as well as elsewhere in South America.

TEPUI SWIFT *Cypseloides phelpsi*

Although Auyán-tepui is the type locality for this species (Collins 1972), it had not been previously recorded on the summit plateau. Gilliard (1941) reported it to be very common on the slopes up to 1100 m with flocks of up to 5000. On the summit it commonly was seen foraging low over vegetation, streams, and open rock. Two females and three males were collected; all had moderately enlarged gonads and no moult.

WHITE-COLLARED SWIFT *Streptoprocne zonaris*

This widely distributed swift frequently was seen in large flocks of up to several hundred birds flying high over the tepui.

BROWN VIOLETEAR *Colibri delphinae*

This species has an altitudinal range from tropical to temperate zones and a wide distribution in northern South America; it is known from many tepuis (Willard *et al.* 1991). This hummingbird was uncommon, with only two specimens taken by mistnet. Neither specimen was in moult; gonads were small.

VELVET-BROWED BRILLIANT *Heliodoxa xanthogonys*

This widespread Pantepui endemic was uncommon; two specimens were taken by mistnet. A male had moderately enlarged testes; a female had minute ovaries; both were in body moult.